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ABSTRACT

This study examined how well the scores from the revised National Teacher Examinations (NTE), the American College Test (ACT), cumulative grade point average, personal characteristics, and certification level can predict actual classroom performance, as measured by three instruments from the Teacher Performance Assessment Instruments (TPAI). Information was collected during 675 hours of clinical observation, by 8 trained raters who observed 90 student teachers from 7 major state universities. A description is given of the rating instruments used, including items chosen from the TPAI (teaching plans and materials, classroom procedures, and interpersonal skills). Resulting data are presented in tabular format and a statistical analysis of the collected data is presented. Several findings important to the field of educational research and pertinent to teacher certification standards are discussed: (1) The revised NTE is a weak predictor of actual classroom performance of student teachers; (2) As measured by the TPAI, student teacher performance was highest in the area of interpersonal skills and lowest in planning; (3) High correlations between certain subtests of the ACT and the NTE suggest that they may be measuring the same variables; (4) The quality of feedback and supervision of instruction is highly related to the quality of performance; and (5) The NTE, used in combination with an objective measure of actual teaching performance, might provide a more accurate description of the quality of student teachers' performance. (Author/JD)

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FINAL REPORT
OF FUNDED PROJECT, FY '83-84

BOARD OF REGENTS'
RESEARCH AND DEVELOPMENT PROGRAM

The Revised National Teacher Examinations as a Predictor of Teachers' Performance in Public School Classrooms

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Abstract

Results of the study entitled "The Revised National Teacher Examinations (NTE) as a Predictor of Teachers' Performance in Public School Classrooms" reveal several findings important to the field of educational research and pertinent to teacher certification standards in the state of Louisiana:

(1) The revised NTE is a weak predictor of actual classroom performance of student teachers. While the NTE, a paper-and-pencil test, serves as a measure of student teachers' knowledge, it does not reveal how well student teachers will actually perform in the classroom, as measured by the Teacher Performance Assessment Instruments (TPAI), which are valid and reliable measures of performance.

(2) Student teacher performance, as measured by the TPAI, was highest in the area of interpersonal skills (classroom management and discipline), low in the area of classroom performance, and lowest in the area of planning for instruction. The NTE, used in combination with an objective measure of actual teaching performance, might provide a more accurate description of the quality of student teachers' performance, which would ensure a higher quality of instruction for students enrolled in Louisiana schools.

(3) The quality of feedback and supervision of instruction provided for student teachers, regardless of the source, is highly related to the quality of their performance in the classroom. Data from this

study clearly indicate specific research needs which should be investigated in the near future.

(4) The high correlations between certain subtests of the ACT and the revised NTE suggest that these two instruments may be measuring the same variables. Rather than overtesting education majors, perhaps students who score high on specific ACT subtests might be exempt from similar subtests on the revised NTE, thus saving students needless expense.

Information collected during 675 hours of clinical observation, conducted by eight trained raters who observed 90 student teachers chosen at random from seven major state universities, will be useful to teacher training institutions wishing to evaluate undergraduate programs.

Results of this study have been presented at the national convention of the Evaluation Network/Evaluation Research Society in Chicago, and at the World Reading Congress, Hong Kong, China. Papers have been accepted for presentation at the American Reading Forum and the Louisiana Reading Association. Results of this study have been submitted for consideration for presentation at the annual convention of the International Reading Association. Articles will be submitted to professional journals in the fields of educational research and teacher education in the fall, 1984.

Continuation of this study was recommended by the Board of Regents, but monies were not available for funding further research in this area. The investigators plan to apply to the National Institute of Education for additional funding.

The Revised National Teacher Examinations (NTE) as a Predictor of Teachers' Performance in Public School Classrooms

Successful performance on the recently revised National Teacher Examinations (NTE) is required by law in Louisiana and other states in order for graduates of approved teacher training programs to apply for certification by the state department of education. Little research exists on the ability of scores from the revised NTE to predict actual classroom performance of either preservice or inservice teachers.

This study was designed to answer two research questions:

(1) How well do the scores from the revised NTE, the American College Test (ACT), cumulative grade point average, sex, race, age, and certification level predict student teachers' actual classroom performance, as measured by three instruments from the Teacher Performance Assessment Instruments (TPAI)?

(2) What conclusions can be drawn about the quality of classroom instruction provided by student teachers chosen at random from the population of student teachers completing their final preservice practicum during the 1983-1984 academic year?

Review of the Literature

In 1979 a Gallup survey indicated the public believed that the best way to improve the quality of public schools was to improve

the quality of teaching. In response to the demand for improved teacher quality, many states and individual school districts have initiated policies which affect the certification, hiring, and tenure of teachers (Gudridge, 1980; Viaanderen, 1980). In many states this has led to legislation which, at times, prescribed the evaluation instruments to be used (Beckham, 1981).

The goal of evaluation of teacher effectiveness at the preservice or early inservice level is two-fold: First, degree-granting institutions and certification agencies want to be able to predict the effectiveness of future teachers in classrooms in order to control the quality of individuals entering the profession. Second, these same groups wish to identify areas of weakness on the part of teachers for the purpose of providing assistance with the hope that instruction will be improved.

Darling-Hammond, Wise, and Pease (1983) stated these concepts in terms of detecting, preventing, and correcting incompetencies. Detecting involves the development and application of instruments designed to measure teacher knowledge or behavior. Preventing focuses on the development of effective teacher education programs. Correcting involves intervention utilizing results of evaluation measures.

Research in teacher evaluation has focused on the identification of factors which influence teacher performance and on the establishment of valid and reliable methods of measuring these factors. Factors which have been studied include overall intelligence or academic ability of teachers, personality or personal characteristics, the teacher's ability to manipulate and control the educational environment, time on

task, and teaching knowledge. Review of the literature reveals:

(1) Studies examining the relationship between teachers' IQ, college grade point average, college board scores and teacher effectiveness reveal positive, but small, correlations (Mailfritzch, 1945; LaDuke, 1945; Rostker, 1945; Hawn, 1981, Lovelace, Collins and DeSanti, 1984). Some preliminary studies also indicate that a measure of writing may prove a better predictor of classroom performance than do other measures of academic achievement.

(2) Prediction of teacher performance based on teachers' attitude, flexibility, interest, problem-solving ability, creativity, and professional commitment is ineffective. King (1981) reviewed the literature and found no set of skills or interests or abilities was able to discriminate between effective and ineffective teachers. Cronbach (1967), Hunt (1975), and Joyce and Weil (1972) found little, if any, correlation between teacher characteristics and effectiveness based on the match of teacher and student traits.

(3) Ellett, Capie, Okey, and Johnson (1978) found the teacher's ability to manipulate and control the classroom environment is a factor related to teacher performance. Ellett, Capie, and Johnson (1980) urged that research be conducted in this little explored area.

(4) Academic engagement, or time and quality of time on task, appears to be an important factor in evaluating teacher effectiveness. The teacher who is able to keep students on task, involved in meaningful work, is more likely to be successful and affect subsequent learning and achievement (Lomax and Cooley, 1979). More specifically, Anderson and Scott (1978) determined that certain types of academic

activities were more likely to produce quality engagement than others. Despite this, few studies have been conducted which relate specific tasks to academic engagement (Anderson, 1976; Capie and Tobin, 1980).

(5) Though it seems logical that the greater the teacher's knowledge in the teaching field, the greater the chance of that person being an effective teacher, little research has been published which directly relates teaching knowledge and success as a teacher (Shalock, 1979). The studies that have been reported have used almost exclusively grade point average or NTE scores as measures of teaching knowledge. Results of these few studies reveal small correlation coefficients, at best.

Instrumentation

Revised National Teacher Examinations. Harris (1981) estimated that over 75,000 teacher candidates in 24 states and 311 school districts take the NTE each year. In many states, including Louisiana, it is a condition for certification.

Since 1940, the NTE has served as a measure of teacher knowledge. In 1950, the NTE was transferred to the Educational Testing Service (ETS), who, for the past 33 years have been in charge of development, administration, and scoring of the test. The revised NTE is the product of three year's labor and 1.5 million dollars of research and development. The old Commons exam has been replaced by the Core Battery; major differences in the two tests include 45 minutes additional time for the revised NTE, the separation of several general knowledge subtests into the General Knowledge and Professional Knowledge

Subtests, and the addition of a Communication Skills section which includes listening, reading and essay subtests. With small correlations reported for the previous version of the NTE, it is essential that the revised version be examined to determine if the new form of the test is a more valid instrument for the prediction of future teachers' classroom performance.

Teacher Performance Assessment Instruments (TPAI). Direct classroom observation has the advantage of seeing actual teaching in a real classroom setting. It reveals "a view of the climate, rapport, interaction, and functioning of the classroom available from no other source" (Evertson and Holley, 1981, p. 90).

The TPAI is recognized as a leader in the field of low-inference teacher observation instruments (Darling-Hammond, Wise, and Pease, 1983). The five instruments (Teaching Plans and Materials, Classroom Performance, Interpersonal Skills, Professional Standards, and Student Perceptions) were designed to determine how well classroom teachers can demonstrate certain minimal teaching skills which are considered to be generally essential for good teaching (Capie, Ellett, and Johnson, 1980). Development of these instruments was begun in 1976, when 4,668 professional educators on different levels responded to a survey instrument containing statements related to generic teaching skills (Johnson, Okey, Capie, and Ellet, RPB 78-1, 1978). Of the five instruments, three are recommended for certification purposes, and were used in this study: Teaching Plans and Materials, Classroom Performance, and Interpersonal Skills.

The Teaching Plans and Materials Instrument (TPM) measures skills which are related to planning for instruction. The teacher being rated

is asked to prepare a portfolio for an instructional unit. Trained data collectors then study the teacher's plans and rate instrument items related to planning, selecting objectives, and choosing materials and equipment.

The Classroom Procedures Instrument (CP) allows trained raters to measure skills related to actual instructional practices within the classroom setting. Direct observation becomes the major source of assessment data (Capie, Ellett, and Johnson, 1980). Teaching methods and techniques are skills which form the basis for this instrument.

The Interpersonal Skills Instrument (IP) measures the teacher's ability to create a comfortable social setting, demonstrate warmth and friendliness, and manage classroom interactions. As with the CP instrument, scores are based on actual classroom observation.

Because a professional skill is a complex set of interrelated behaviors, statements which identify these skills are general. Second- and third-order behavioral descriptors were designed to facilitate assessment. Indicators are second-order, sentence-length statements, scored on a scale of 1-5, which provide more detailed behavioral descriptors of teaching skills. A higher score reflects a teacher who is likely to be demonstrating the skill. Descriptors are third-order behavioral descriptors which associate observable teacher behavior with scale points for scoring. For example, Competency 2 has three indicators, one of which is described in Table 1. The descriptors for this indicator are used to score the teacher's performance.

Approximately two and one-half man hours are required for each observation of a student teacher with these three instruments: one hour

Table 1.

Example of a Competency, Indicator, and Descriptors from the Teacher Performance Assessment Instruments

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Competency 2: Organizes instruction to take into account individual differences among learners

Indicator 8: Organizes instruction to take into account differences among learners in their rates of learning

Descriptors:

a. Learners are permitted to work at their own rate toward some of the objectives some of the time.

b. Special provisions are available for learners who work slowly.

*c. Students who finish early are provided with content-related enrichment activities some of the time.

*d. Objectives are divided between those that all learners should achieve and enrichment objectives that are desirable but not essential.

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*Evidence of this descriptor must be found in the portfolio.

Ratings:

1. None of the discriptors is evident.
2. One of the discriptors is evident.
3. Two of the discriptors is evident.
4. Three of the discriptors are evident.
5. Four of the discriptors are evident.

to examine the portfolio prepared by the student teacher (this includes a structured interview with the student teacher), and one and one-half hours to actually observe the student teacher in the classroom environment, which is required for completion of the CP and IS instruments.

Approximately 10 years and 10 million dollars have gone into the development of the TPAI. Research indicates that the instrument can be used to predict student achievement gains (Capie, Tobin, and Bowell, 1980; Lewis, 1982), that it has high levels of construct validity, and that its use aids in maintaining the objectivity of the observer. Interrater reliability is high, and since almost 5,000 educators on different levels were surveyed as to the importance of the skills it measures, it has high content validity (Capie, Johnson, Ellett, and Okey, 1979; Capie, Tobin, and Bowell, 1980; Johnson, Okey, Capie, Ellett, and Adams, 1978; Capie, Ellett and Johnson, 1980; Capie, Ellett, and Johnson, 1979).

Methodology

Determining Interrater Reliability. Eight investigators representing seven major Louisiana universities were trained to observe student teachers using the TPAI in the fall of 1983 by Dr. Charles Johnson, Professor, University of Georgia, who is one of the senior authors of the instrument. As a group, the investigators have 70 years experience observing student teachers. In addition, two of the raters serve as chairpersons for their respective departments of teacher education.

The raters spent three days with Dr. Johnson learning to administer the TPAI. At the end of the three-day inservice program, they examined a sample portfolio, observed a videotaped lesson, and rated the teacher's

performance using the three instruments from the TPAI (TPM, CP, and IS). Dr. Lee Hoffman, Assistant Director, Bureau of Evaluation, State Department of Education, computed the interrater reliability for the observation:

Instrument	Interrater Reliability
Teaching Plans and Materials	87.5%
Classroom Procedures	87.5%
Interpersonal Skills	87.5%

Dr. Johnson noted that higher interrater reliability percentages are noted when observers can actually go into a classroom and conduct the observation, since the video camera never tapes exactly what a rater would observe during actual classroom instruction. These figures agree with previous studies of interrater reliability, which indicate that, with training, classroom agreement rates of 85 to 90% are common (Capie, Ellett, and Johnson, 1979).

Sampling Procedure. Ninety college seniors who had completed all prerequisites for student teaching, and who had enrolled in the student teaching practicum, were chosen at random from the population of all seniors student teaching during the academic year 1983-1984 at any one of seven universities in Louisiana. Half the students were chosen for the study and observed during the fall of 1983, half during the spring of 1984.

Data Collection. The eight investigators observed the 90 student teachers three times each, with the exception of one student teacher who withdrew from the university and resigned from student teaching after the rater had completed two of the three required observation. Some 269 observations

were conducted, totaling 672 hours of documented clinical observation. Raters also collected the following demographic data and achievement scores on each participant in the study: ACT scores, NTE scores, cumulative grade point average at the end of the semester prior to student teaching, race, sex, age, and certification level (elementary, secondary, or kindergarten-twelth grade). All students participating in this study were assured that since their scores would be reported in terms of group averages, total anonymity would be maintained. Results of a pilot study conducted in the spring of 1983 revealed that most student teachers were willing to participate in the study, once they understood chat the observer's ratings could in no way affect the grade the student teacher received at the completion of the practicum.

Results of Data Analyses

Descriptive statistics were employed to analyze demographic data. Of the 90 students participating in the study, 74 were female and 16 male. Of the females, 11 were black, one was Hispanic, and 62, white. Four of the males were black, one was Hispanic, and 11 were white (see Table 2).

Table 2.

Subjects' Race by Sex

Race	Females	Males	Total
Black	11	4	15
Hispanic	1	1	2
White	62	11	73
Total	74	16	90

Mean age of the 90 student teachers was 24.26 years, with a mode of 22 years, and a range of 20-46 years. Their mean cumulative grade point average at the end of the semester prior to student teaching was 2.98, with a standard deviation of 0.44 on a four point grading scale (A=4.0, F=0.0). Thirty-eight of the students transferred into the university from which they would graduate from another university. Table 3 presents the certification levels of the 89 student teachers who completed the study. Some 82% of these students desired elementary

Table 3.

Student Teachers' Level of Certification by Sex

Certification Level	Females	Males	Total
Elementary	48	0	48
Secondary	25	14	39
Kindergarten through Twelfth Grade	0	2	2
Total	73	16	89

certification. Almost twice as many females desired certification at the elementary level than at the secondary level.

Tables 4 and 5 report students' mean ACT and NTE scores, respectively. Despite offering to pay students to contact ETS and obtain copies of their ACT scores, the investigators were able to account for ACT scores on only 59 of the 89 subjects. However, this number is large enough to conduct higher-level analyses of the data. Seventy-eight of the 89 students

Table 4.

Mean ACT Scores (N=59)

Subtest	Mean Score	Standard Deviation
English	18.12	5.43
Math	15.63	6.70
Social Studies	16.10	7.36
Science	19.44	5.47
Composite	17.35	5.17

Table 5.

Mean NTE Scores

Subtest	Raw Score	Standard Deviation	N	National Percentile
General Knowledge	655.94	12.54	78	45
Professional Knowledge	654.64	37.53	75	38
Communication Skills	660.13	11.03	75	48
Area Examination	605.96	13.86	57	Varies

took the Core Battery, while only 57 completed the Area Examination in their field of certification. Table 5 also reports national percentile scores equivalent to the mean raw scores of the students.

Tables 6, 7, and 8 report the average score for each indicator on the three instruments of the TPAI--TPM, CP, and IS, respectively. The score represents the group mean for the indicators on each instrument when the group mean for Observations 1, 2, and 3 have been averaged. (Note: All observations were scheduled at least one week prior to the rater's conducting the observation; no "suprise" observations were conducted. The average of the scores from the three observations was employed in computing average teaching performance for each student teacher. Mean performance for the group of 89 student teachers was then computed.) A mean score of three was used as an indication of having performed at the minimal competency level for each of the indicators on the three instruments. Scores for each instrument were obtained by summing the scores for the indicators on each instrument.

As a group, student teachers scored at the minimual level of competency on only one indicator on the Teaching Plans and Materials Instrument, while they achieved success on 15 of the 20 indicators on the Classroom Procedures Instrument. Student teachers participating in this study met the minimum competency level on all 10 of the indicators for the Interpersonal Skills Instrument, as a group.

Pearson product moment correlation coefficients were computed to determine the extent of the relationships between (1) ACT scores and grade point average, sex, race, age, and level of certification (see Table 9); (2) NTE and ACT scores (see Table 10); (3) NTE scores and

Table 6.

Student Teachers' Mean Scores from Three Observations on Fifteen Indicators from the Teaching Plans and Materials Instrument from the TPAI (N=90)

Competencies and Related Indicators	Score
PLANS INSTRUCTION TO ACHIEVE SELECTED OBJECTIVES:	
1. Specifies or selects learner objectives for lessons.	2.770
2. Specifies or selects teaching procedures for lessons.	2.743
3. Specifies or selects content, materials, and media for lessons.	2.558
4. Specifies or selects materials and procedures for assessing learner progress on the objectives.	2.472
5. Plans instruction at a variety of levels.	2.937
ORGANIZES INSTRUCTION TO TAKE INTO ACCOUNT INDIVIDUAL DIFFERENCES AMONG LEARNERS:	
6. Organizes instruction to take into account differences among learners in their capabilities.	1.930
7. Organizes instruction to take into account differences among learners in their learning styles.	1.349
8. Organizes instruction to take into account differences among learners in their rates of learning.	2.310
OBTAINS AND USES INFORMATION ABOUT THE NEEDS AND PROGRESS OF INDIVIDUAL LEARNERS:	
9. Uses teacher-made or teacher-selected evaluation materials or procedures to obtain information about learner progress.	2.406

Table 6 (Continued).

Competencies and Related Inticators	Score
10. Communicates with individual learners about their needs and progress.	2.815
REFERS LEARNERS WITH SPECIAL PROBLEMS TO SPECIALISTS:	
11. Obtains and uses information about learners from school records.	2.004
12. Identifies learners who require the assistance of specialists.	1.985
13. Obtains and uses information from co-workers and parents to assist with specific learner problems.	2.695
OBTAINS AND USES INFORMATION ABOUT THE EFFECTIVENESS OF INSTRUCTION TO REVISE IT WHEN NECESSARY:	
14. Obtains information on the effectiveness of instruction.	2.577
15. Revises instruction as needed using evaluation results and observation data.	3.238

Table 7.

Student Teachers' Mean Scores from Three Observations on Twenty Indicators from the Classroom Procedures Instrument from the TPAI (N=90)

Competencies and Related Indicators	Score
USES INSTRUCTIONAL TECHNIQUES, METHODS AND MEDIA RELATED TO THE OBJECTIVES:	
1. Uses teaching methods appropriate for objectives, learners and environment.	3.502
2. Uses instructional equipment and other instructional aids.	2.721
3. Uses instructional materials that provide learners with appropriate practice on objectives.	3.074
COMMUNICATES WITH LEARNERS:	
4. Gives directions and explanations related to lesson content.	3.566
5. Clarifies directions and explanations when learners misunderstand lesson content.	3.978
6. Uses responses and questions from learners in teaching.	3.435
7. Provides feedback to learners throughout the lesson.	2.963
8. Uses acceptable written and oral expression with learners.	4.461
DEMONSTRATES A REPERTOIRE OF TEACHING METHODS:	
9. Implements learning activities in a logical sequence.	3.520

Table 7 (Continued).

Competencies and Related Indicators	Score
10. Demonstrates ability to conduct lessons using a variety of teaching methods.	2.759
11. Demonstrates ability to work with individuals, small groups, and large groups.	3.167
REINFORCES AND ENCOURAGES LEARNER INVOLVEMENT IN INSTRUCTION:	
12. Uses procedures which get learners initially involved in the lesson.	2.539
13. Provides learners with opportunities for participating.	3.744
14. Maintains learner involvement in lessons.	3.956
15. Reinforces and encourages the efforts of learners to maintain involvement.	3.509
DEMONSTRATES AN UNDERSTANDING OF THE SCHOOL SUBJECT BEING TAUGHT AND DEMONSTRATES ITS RELEVANCE:	
16. Helps learners recognize the purpose and importance of topics or activities.	2.361
17. Demonstrates knowledge in the subject area.	3.528
ORGANIZES TIME, SPACE, MATERIALS, AND EQUIPMENT FOR INSTRUCTION:	
18. Attends to routine tasks.	3.104
19. Uses instructional time effectively.	4.183
20. Provides a learning environment that is attractive and orderly.	4.060

Table 8.

Student Teachers' Mean Scores from Three Observations on Ten Indicators from the Interpersonal Skills Instrument from the TPAI (N=90)

Competencies and Related Indicators	
DEMONSTRATES ENTHUSIASM FOR TEACHING AND LEARNING AND THE SUBJECT BEING TAUGHT:	
1. Communicates personal enthusiasm.	3.755
2. Stimulates learner interest.	3.001
3. Conveys the impression of knowing what to do and how to do it.	3.432
HELPS LEARNERS DEVELOP POSITIVE SELF-CONCEPTS:	
4. Demonstrates warmth and friendliness.	3.592
5. Demonstrates sensitivity to the needs and feelings of learners.	3.807
6. Demonstrates patience, empathy, and understanding.	3.666
MANAGES CLASSROOM INTERACTIONS:	
7. Provides feedback to learners about their behavior:	3.971
8. Promotes comfortable interpersonal relationships.	4.282
9. Maintains appropriate classroom behavior.	3.725
10. Manages disruptive behavior among learners.	4.271

Table 9.

Results of Pearson r Correlations Between Student Teachers' Cumulative Grade Point Average, Sex, Race, and Certification Level with Scores from the ACT

	Cumulative GPA	Sex	Race	Age	Certification Level
ACT English	0.3491 (57) P=0.004	-0.0271 (59) P=0.419	-0.5510 (59) P=0.000	-0.0515 (59) P=0.349	0.1315 (59) P=0.160
ACT Math	0.3855 (57) P=0.002	0.1116 (59) P=0.200	-0.5117 (59) P=0.000	-0.0487 (59) P=0.357	0.2482 (59) P=0.029
ACT Social Studies	0.4001 (57) P=0.001	-0.1345 (59) P=0.155	-0.4392 (59) P=0.000	-0.0372 (59) P=0.390	0.2048 (59) P=0.060
ACT Science	0.4115 (57) P=0.001	-0.0779 (59) P=0.279	-0.4281 (59) P=0.000	-0.0297 (59) P=0.412	0.2134 (59) P=0.052
ACT Composite	0.4608 (58) P=0.000	-0.0363 (60) P=0.391	-0.5645 (60) P=0.000	-0.0463 (60) P=0.363	0.2488 (60) P=0.028

Table 10.

Results of Pearson r Correlations Between Student Teachers' Scores on Subtests of the ACT and NTE

	ACT English	ACT Math	ACT Social Studies	ACT Science	ACT Composite
NTE General Knowledge	0.7348 (53) P=0.000	0.5799 (53) P=0.000	0.7543 (53) P=0.000	0.7517 (53) P=0.000	0.8315 (54) P=0.000
NTE Professional Knowledge	0.1634 (50) P=0.128	0.3064 (50) P=0.015	0.1373 (50) P=0.171	0.2531 (50) P=0.038	0.2172 (51) P=0.063
NTE Communication Skills	0.7160 (50) P=0.000	0.5248 (50) P=0.000	0.6761 (50) P=0.000	0.6019 (50) P=0.000	0.7527 (51) P=0.000
NTE Area Exam	0.3840 (37) P=0.009	0.0475 (37) P=0.390	0.3952 (37) P=0.008	0.4089 (37) P=0.006	0.3622 (37) P=0.014

cumulative grade point average, sex, race, age, and certification level (see Table 11); and (4) student teachers' scores on subtests of the NTE and TPAI (see Table 12).

While 10 of the 25 correlation coefficients computed between student teachers' ACT subtest scores and their cumulative grade point average, sex, race, age, and certification level are statistically-significant, none of the correlation coefficients are high, indicating that while a degree of relationship exists between some of these factors, in no case is the relationship strong enough to be of practical significance. However, results of Pearson product moment correlation coefficients computed between student teachers' scores on NTE subtests and ACT subtests are productive. A correlation of .83 was noted between the student teachers' scores on the NTE General Knowledge Subtest and their ACT composite score, indicating a strong relationship between these two factors. Also, a correlation of .75 was noted between scores from the NTE Communication Skills Subtest and the ACT composite score. In other words, the ACT composite score is a good predictor of student teachers' scores on the NTE General Knowledge and Communication Skills Subtests.

Results of Pearson product moment correlation coefficients computed between student teachers' scores on subtests of the NTE and their cumulative grade point average, sex, race, age, and certification level reveal very low correlations between any of these factors. Student performance on the NTE cannot be predicted from cumulative grade point average, sex, race, age, or certification level of the student.

When correlation coefficients are computed between student teachers' average performance on subtests of the TPAI and on the total TPAI and

Table 11.

Results of Pearson Product Moment Correlation Coefficients Computed Between Student Teachers' Scores from the NTE and Their Cumulative Grade Point Average, Sex, Race, Age, and Certification Level

	Cumulative GPA	Sex	Race	Age	Certification Level
NTE General Knowledge	0.4196 (75) P-0.000	0.0193 (78) P-0.433	-0.2988 (78) P-0.004	0.2791 (78) P-0.007	0.2298 (78) P-0.021
NTE Professional Knowledge	0.1615 (72) P-0.088	0.0228 (75) P-0.423	-0.1598 (75) P-0.085	0.1229 (75) P-0.147	0.1279 (75) P-0.137
NTE Communication Skills	0.2624 (72) P-0.013	-0.0570 (75) P-0.314	-0.2445 (75) P-0.017	-0.2305 (75) P-0.023	0.1539 (75) P-0.094
NTE Area Exam	0.1064 (56) P-0.218	-0.0157 (57) P-0.454	-0.1496 (57) P-0.133	-0.2614 (57) P-0.025	-0.1480 (57) P-0.136

Table 12.

Results of Pearson Product Moment Correlation Coefficients Computed Between Student Teachers' Scores on Subtests from the NTE and TPAI

	Student Teachers' Averages on:			
	Total TPAI	Teaching Plans and Materials	Classroom Performance	Interpersonal Skills
NTE General Knowledge	0.2413 (76) P-0.018	0.1387 (77) P-0.114	0.3338 (78) P-0.001	0.2077 (77) P-0.035
NTE Professional Knowledge	0.1385 (73) P-0.121	0.0882 (74) P-0.227	0.1568 (75) P-0.090	0.1350 (74) P-0.126
NTE Communication Skills	0.2692 (73) P-0.011	0.1780 (74) P-0.065	0.3212 (75) P-0.002	0.2460 (74) P-0.017
NTE Area Exam	0.3000 (57) P-0.012	0.2258 (57) P-0.046	0.3113 (57) P-0.009	0.2877 (57) P-0.015

on scores on subtests of the NTE, results of the analyses reveal low correlations in every case. The revised NTE does not appear to be a good predictor of student teachers' classroom performance as measured by three instruments from the Teacher Performance Assessment Instruments.

In order to determine the degree of change in the effectiveness of student teachers from Observation 1 to Observation 2 to Observation 3, correlated t-tests were computed between mean scores from the three observations on the three TPAI instruments, and on student teachers' mean scores from the three observations on the total TPAI (see Tables 13, 14, 15, and 16). A statistically-signficant difference in means from two of the observations, with the mean from the second observation higher than the first, would indicated improved performance on the part of the student teachers. Of the twelve correlated t-tests computed on the data, only one was significant at the .01 alpha level chosen for this study. Results of the analyses demonstrate no statistically-significant difference in student teachers' scores on the Teaching Plans and Materials Subtest from one observation to another, no statistically-significant difference in their scores on the Classroom Precedures Subtest, and no statistically-significant difference in scores on the Interpersonal Skills Subtest from one observation to another.

A statistically-significant difference was noted between student teachers' scores on the total TPAI from Observation 2 to Observation 3; however, a difference of approximately five points in performance may not be educationally significant. Moreover, examination of the significance

Table 13.

Results of Correlated t-tests Between Student Teachers' Scores on the Teaching Plans and Materials Instrument from Three Observations

Observation	N	Mean	t-value	d.f.	Significance Level
1	88	36.3068	0.48	87	0.631
2		35.9773			
2	88	36.0000	-2.45	87	0.016
3		37.6364			
1	88	36.4205	-1.64	87	0.105
3		37.3614			

Table 14.

Results of Correlated t-tests Between Student Teachers' Scores on the Classroom Procedures Instrument from Three Observations

Observation	N	Mean	t-value	d.f.	Significance Level
1	88	68.7045	1.52	87	0.132
2		67.1364			
2	88	67.1477	-1.81	87	0.074
3		68.9773			
1	87	68.9195	-0.10	86	0.924
3		69.0460			

Table 15.

Results of Correlated t-tests Between Student Teachers' Scores on the Interpersonal Skills Instrument from Three Observations

Observation	N	Mean	t-value	d.f.	Significance Level
1	90	37.2778	0.64	89	0.522
2		36.8889			
2	89	36.9775	-1.98	88	0.055
3		38.3371			
1	89	37.5056	-1.08	88	0.282
3		38.3371			

Table 16.

Results of Correlated t-tests Between Student Teachers' Scores on the Entire Teacher Performance Assessment Instrument from Three Observations

Observation	N	Mean	t-value	d.f.	Significance Level
1	87	142.0805	1.09	86	0.277
2		139.9310			
2	87	139.9425	-2.81	86	0.006
3		144.8966			
1	87	142.8621	-0.92	86	0.359
3		145.1034			

level of the correlated t-tests on student teachers' total TPAI scores from Observation 1 to Observation 3 reveals an alpha level of 0.359. Thirty-six times out of 100, a difference in the means would be a chance occurrence.

Results and Conclusions

Results of this study obtained through statistical analyses of data collected are summarized below:

(1) As a group, the student teacher met or exceeded the minimum competency level on 26 (58%) of the behavioral indicators on the three instruments of the TPAI employed in this study: Teaching Plans and Materials, Classroom Procedures, and Interpersonal Skills.

(2) Correlation coefficients computed between student teachers' ACT subtest scores and their cumulative grade point average prior to student teaching, sex, race, age, and certification level are very low, and reveal no educationally-significant relationships.

(3) Analyses of correlations between NTE and ACT subtests reveal strong correlations between student teachers' ACT composite score and their scores on the NTE General Knowledge Subtest (r=.83) and the Communication Skills Subtest (r=.75).

(4) Results of correlation coefficients computed between NTE scores and students' cumulative grade point average prior to student teaching, sex, race, age, and level of certification suggest that the performance of student teachers' on the NTE cannot be predicted on the basis of any of these variables.

(5) Correlations between the revised NTE and student teachers' actual classroom performance are very weak, with performance measured by

actual classroom observations with the three instruments of the TPAI. No robust correlations are noted in any of the analyses.

(6) No statistically-significant differences were noted in student teachers' mean performance on the three instruments of the TPAI from one observation to another.

Conclusions drawn from the results of the data analyses of this study include:

(1) The revised NTE is a weak predictor of actual classroom performance of student teachers in this study, based on the three instruments from the TPAI. While the NTE as a paper-and-pencil test serves as a measure of student teachers' knowledge, it does not reveal how well student teachers will actually perform in the classroom.

(2) Student teacher performance, as measured by the TPAI, was highest in the area of interpersonal skills (classroom management and discipline), low in the are of classroom performance, and lowest in the area of planning for instruction. The NTE, used in combination with an objective measure of observable teaching behaviors, could provide a more accurate description of the quality of student teachers' performance. This combination of measures of teaching performance would allow Louisiana to more effectively select higher quality teachers, which will ensure higher academic achievement for pupils enrolled in Louisiana schools.

(3) The quality of feedback and supervision of instruction provided for student teachers, regardless of the source, is highly related to the quality of their performance in the classroom. Data from this study clearly indicate specific research needs which should be investigated in the near future, including the effects of training in clinical

supervision with an objective, normed, and validated instrument on effectiveness of student teachers' classroom performance.

(4) The high correlations between certain subtests of the ACT and the revised NTE suggest that these instruments may be measuring the same variables. Rather than overtesting education majors, perhaps students who score high on specific ACT subtests might be exempt from similar subtests on the revised NTE, thus saving students needless expense.

Results and conclusions from this study are generalizable only to similar populations of student teachers enrolled in teacher training programs having characteristics in common with those seven which participated in this study.

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